CLAIM AMENDMENTS

Please amend the claims as follows (with strikethrough indicating deletions and underlying indicating additions to the claims):

What is claimed is:

1. (Currently Amended)A method for non-invasive monitoring of subject heartbeat rate, said method comprised of:

~~C~~collecting vertical pressure signals comprising vertical pressure measurements along time ~~changes~~ received from at least two sensors located beneath the subject's body;

~~Finding~~ generating at least one horizontal signal by subtracting at least one said vertical pressure signal from another vertical pressure signal ~~the difference between at least two sensor signal measurements~~;

analyzing the ~~difference~~ at least one horizontal signal for identifying and detecting heartbeat~~s or heart~~ rate of said subject.

2. (Currently Amended)The method of claim 1 further comprising the step of filtering the ~~calculated difference~~ horizontal signals for reducing background noise and respiratory artifact and other body movements in accordance with predefined signal frequency band values.

3.(Original) The method of claim 1 further comprising the step of identifying the respiration rate.

4. (Currently Amended)The method of claim 1 further comprising the step of calculating ~~the~~ a sum <u>signal comprising the sum</u> of at least two <u>vertical pressure</u> <u>signals</u> ~~measurements~~ and filtering and analyzing the calculated sum signal in combination with the ~~difference~~ <u>horizontal</u> signal for identifying and detecting the heartbeat rate and respiration rate.

5. (Currently Amended)The method of claim 1 further comprising the step of ~~calculating~~ selecting the ~~maximum~~ <u>horizontal signal having the largest integral value</u> <u>of all horizontal signals</u> ~~difference signal between sets of sensors~~, wherein the identification and detection of the heartbeat rate is based on said ~~maximum~~ <u>selected</u> <u>horizontal</u> signal ~~difference~~.

6.(Original) The method of claim 1 further comprising the step of calibration for calculating the pre-defined filter signal frequency band values, wherein calibration is based on the FFT algorithm.

7. (Currently amended)The method of claim <u>2</u> ~~1~~ wherein the filtering is ~~preformed~~ <u>achieved</u> by <u>using</u> a high pass filter, wherein the cut off frequency is twice as<u> a</u> pre-defined heart<u>beat</u> rate.

8. (Currently amended) The method of claim <u>2</u> ~~1~~ wherein the analyzing includes identifying peak values of the filtered signal.

9. (Original) The method of claim 1 wherein at least one sensor is located beneath the

lower part of the subject's body and at least one sensor is located beneath the upper part of the subject's body.

10. (Currently amended)The method of claim 1 wherein the ~~difference~~ horizontal signal represents the horizontal movements of the subject and the analyzing includes detection of blood circulation.

11. (Currently amended)A system for non-invasive monitoring of subject heartbeat rate, said system comprised of:

at least two pressure sensors located beneath the subject's body for ~~measuring~~ sensing vertical signals comprising vertical pressure ~~changes~~ values along time;

an electronic mechanism for calculating at least one horizontal signal by subtracting at least one vertical signal from another vertical signal; ~~finding the difference between at least two sensor signal measurements;~~

a processing module for analyzing the ~~difference~~ horizontal signal to identify and detect the ~~heartbeats or~~ heartbeat rate.

12. (Currently amended)The system of claim 11 further comprising a filtering module for reducing background noise of the ~~difference~~ horizontal signal in accordance with pre-defined signal frequency band values.

13. (Currently amended)The system of claim 11 wherein the processing module further identifies the respiration rate.

14. (Currently Amended)The system of claim 11 wherein the electronic mechanism further calculates the sum <u>signal</u> of at least two <u>vertical</u> signal<u>s</u> <s>measurements</s> and the processing module further analyzes the calculated sum signal in combination with the <s>difference</s> <u>horizontal</u> signal for identifying and detecting the heartbeat rate and respiration rate.

15. (Currently Amended)The system of claim 11 wherein the electronic mechanism further <u>selects the horizontal signal having the largest integral value of all horizontal signals</u> <s>calculates the maximum difference signal between sets of sensors</s>, wherein the identification and detection of the heartbeat rate is based on said <u>selected</u> <s>maximum</s> <u>horizontal</u> signal <s>difference</s>.

16. (Currently Amended)The system of claim <u>12</u> <s>11</s> further comprising a calibration module for calculating the pre-defined signal frequency band values, wherein calibration is based on the FFT algorithm.

17. (Currently Amended)The system of claim 11 wherein the filtering module is a high pass filter, wherein the cut off frequency is twice a pre-defined heart rate.

18. (Original)The system of claim 11 wherein at least one sensor is located beneath the lower part of the subject's body and at least one sensor is located beneath the upper part of the subject's body.

19. (Currently Amended)The system of claim <s>11</s> <u>12</u> wherein the analyzing includes

identifying peak values of the filtered signal.

20. (Currently Amended) The system of claim 11 wherein the ~~difference~~ horizontal signal represents the horizontal movements of the subject and the filtering and analyzing includes detection of the blood circulation.

21. (Original) The system of claim 11 wherein the sensors are integrated within a single rigid housing.